

REMARKS

The present application was filed on July 15, 2003 with claims 1-17, all of which remain pending. Claims 1, 16 and 17 are the independent claims.

The specification is objected to under 37 CFR 1.75(d)(1) as failing to provide proper antecedent basis for the subject matter recited in claim 17.

Claims 1-5, 11 and 14-17 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 7,013,255 (hereinafter “Smith”) in view of St. Hontas et al., “ATM Traffic Generator Card. An Integrated Solution,” Proceedings of the Third IEEE Symposium on Computers and Communications (ISCC ‘98), 1998, pages 161-165 (hereinafter “St. Hontas”).

Claims 6-10, 12 and 13 are rejected under 35 U.S.C. §103(a) as being unpatentable over Smith and St. Hontas in view of Bae & Suda, “Survey of Traffic Control Schemes and Protocols in ATM Networks,” Proceedings of the IEEE, Vol. 79 No. 2, Feb. 1991, pages 170-189 (hereinafter “Bae”).

With respect to the objection to the specification, Applicants initially note that 37 CFR 1.75(d)(1) requires, with emphasis added, that “the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.” See also MPEP 2173.05(e) (“There is no requirement that the words in the claim must match those used in the specification disclosure.”)

Independent claim 17 is directed to an article of manufacture comprising a storage medium containing one or more software programs for use in generating data traffic in a traffic generator. The Examiner contends that “no antecedent basis [is] provided for the article of manufacture or storage medium recited in claim 17.”

Applicants respectfully submit that the objected-to limitations are clearly supported by the present specification at, for example, page 4, lines 10-28 (stating that an illustrative embodiment of the present invention “may be implemented at least in part in the form of software comprising one or more programs stored in the memory of the information processing device and executed by the processor of the information processing device.”), and page 13, lines 21-23 (“[O]ne or more software programs for implementing the traffic generation functionality described herein may be stored in a memory of an information processing device and executed by a processor of that

device.”) Thus, it is readily apparent that the specification clearly describes an illustrative embodiment of the recited storage medium as comprising, for example, a memory of an information processing device.

In view of the above, Applicants respectfully submit that the present objection is improper and should be withdrawn.

With respect to the present §103 rejection of independent claim 1, Applicants respectfully traverse for at least the reasons identified in the prior Office Action response dated October 30, 2007.

Notwithstanding the foregoing traversal, Applicants have amended claim 1 without prejudice in order to clarify the claimed subject matter. In view of the foregoing traversal, Applicants respectfully submit that the present amendment is not being made for reasons relating to patentability, but rather is intended solely to expedite allowance.

Specifically, Applicants have amended claim 1 to specify that the step of generating the second type of traffic further comprises accumulating compensatory traffic over one or more of the time intervals for which the first type of traffic is generated, and generating the traffic burst based at least in part on the accumulated compensatory traffic. Support for these amendments may be found in the specification at, for example, page 6, line 22, to page 7, line 2, and page 8, line 13, to page 9, line 2, with reference to FIG. 3.

Dependent claim 2 has been canceled without prejudice.

In formulating the present rejection of claim 1 as previously presented, the Examiner concedes that Smith fails to disclose the limitation wherein a determination as to whether or not a traffic burst is generated for a given time interval is based at least in part on an amount of the first type of traffic generated over one or more previous time intervals. Instead, the Examiner argues that this limitation is met by Section 4.1.1 of St. Hontas. Specifically, the Examiner relies primarily on the last sentence of the first paragraph of page 3 of St. Hontas, which, as noted above, states that “dependencies between a burst and the following silence, or autocorrelative (e.g., autoregressive) laws between the bursts from cycle to cycle are easily implementable.”

As noted in their previous response, Applicants believe that one skilled in the art would not have been motivated to modify Smith to incorporate the techniques disclosed in the relied-upon

portion of St. Hontas. In arguing that Smith does not teach away from the proposed combination, at page 4, last paragraph, of the present Office Action, the Examiner argues that column 1, lines 57-64, of “Smith expressly discloses that the autoregressive model has been known to be successful in certain packet-based environments, like ATM.” Applicants respectfully note that Smith at column 1, line 57, to column 2, line 3, states as follows, with emphasis supplied:

Other models have been considered in modeling ATM traffic using random number generators, including the Markov Modulated model, the Transform Expand Sample model, the Autoregressive model, the Fluid model, and the Self-similar model. Although these models have been found to have varying degrees of success for modeling Ethernet traffic (which, like ATM networks, uses a packet-based protocol), they have been largely unsuccessful in characterizing the bursty nature of ATM traffic.

The failure of these models is in part due to the differences between ATM networks and other type [sic] of packet networks. For example, ATM is a connection-oriented protocol with a fixed length packet size. This contrasts with Ethernet which is a connectionless protocol with variable length packet size.

Applicants respectfully disagree with the Examiner’s characterization of the relied-upon portion of Smith. Rather, Applicants respectfully submit that the relied-upon portion of Smith indicates that while the autoregressive model has been found to have varying degrees of success for modeling Ethernet traffic, the autoregressive model has been “largely unsuccessful” and a “failure” in characterizing the bursty nature of ATM traffic. Despite there being certain similarities between Ethernet networks and ATM networks, this failure of the autoregressive model with regard to ATM networks is in part to due to the differences between ATM networks and Ethernet networks. For example, although both Ethernet and ATM are packet-based protocols, Ethernet is a connectionless protocol with variable length packet size, while ATM is a connection-oriented protocol with a fixed length packet size.

As such, Applicants respectfully disagree with the Examiner’s characterization of the relied-upon portion of Smith as disclosing that the autoregressive model has been known to be successful in certain packet-based environments like ATM. To the contrary, Smith itself teaches directly away from the Examiner’s proposal to modify Smith so as to implement the autoregressive model allegedly

disclosed by St. Hontas. One skilled in the art faced with the teachings of Smith explicitly indicating failure of the autoregressive model in the ATM context, would clearly not look to modify the Smith arrangements with an ATM traffic generator based on autoregressive techniques as described in St. Hontas.

Accordingly, it is believed that amended claim 1 is not obvious over the proposed combination of Smith and St. Hontas.

Independent claims 16 and 17 have amended in a manner similar to claim 1 and are hence believed allowable for reasons similar to those identified above with regard to claim 1.

Dependent claims 3-15 are believed allowable at least by virtue of their dependency from independent claim 1. These dependent claims are also believed to define separately-patentable subject matter over the cited art.

For example, dependent claim 6 specifies that the step of generating the second type of traffic further comprises the step of determining, for each of the one or more time intervals, if an amount of the traffic of the first type generated during that interval is less than a comparison level, and if so adding an amount of compensatory traffic to a burst container having a capacity given by a burst size.

In formulating the present rejection of dependent claim 6, the Examiner concedes that the combination of Smith and St. Hontas fails to disclose the above claim limitations. Instead, the Examiner relies upon Bae at page 177, left column, line 18, to page 178, right column, line 8. Applicants respectfully submit that the relied-upon portion of Bae merely discloses a conventional leaky-bucket bandwidth enforcement mechanism in which arriving cells must obtain a token from a token pool in order to enter the network; if there is no token, a cell must wait in the queue until a new token is generated. If the number of tokens in the token pool exceeds some predefined threshold value, the process of token generation stops.

The Examiner analogizes Bae's threshold level of tokens in the token pool to the recited comparison level and Bae's queue to the burst container having a capacity given by a burst size. Even assuming that these elements of Bae could in fact be considered analogous to those recited in claim 6, the relied-upon portion of Bae fails to meet the limitations of claim 6.

Specifically, the Examiner argues that Bae teaches a technique wherein, if a number of cells arriving during an interval is less than the threshold value of tokens in the token pool, an amount of compensatory traffic is added to the queue. Applicants respectfully disagree and instead note that, in the technique disclosed by Bae, if the number of cells arriving during an interval is less than the threshold value of tokens in the token pool, all of the arriving cells will be able to immediately obtain a token from the token pool and hence will be able to immediately enter the network without waiting in the queue until a new token is generated. In other words, if a number of cells arriving during an interval is less than the threshold value of tokens in the token pool, no traffic is added to the queue.

Accordingly, Bae fails to meet the supplement the teachings of Smith and St. Hontas so as to reach the limitations of claim 6.

Likewise, the Examiner concedes that the combined teachings of Smith and St. Hontas fail to meet the limitations of claim 12 directed to adding compensatory traffic to the burst container whenever the total traffic of the first type generated within a given sample slot time is less than a comparison level, such that for each such addition of compensatory traffic, a level of traffic in the burst container increases by the compensatory-accumulation size. Rather, the Examiner relies on the portion of Bae described above with reference to claim 6.

As noted above with respect to claim 6, Bae teaches a technique wherein if a number of cells arriving during an interval is less than the threshold value of tokens in the token pool, no traffic is added to the queue. As such, Bae fails to teach the claimed method directed to adding compensatory traffic to the burst container whenever traffic of the first type generated within a given sample slot time is less than a comparison level, much less doing so such that for each such addition of compensatory traffic, a level of traffic in the burst container increases by the compensatory-accumulation size.

Accordingly, Bae fails to supplement the teachings of Smith and St. Hontas so as to meet the limitations of claim 12.

In formulating the present rejection of dependent claim 13, the Examiner concedes that the combination of Smith and St. Hontas fails to disclose the claim limitation directed to generating a

plurality of traffic bursts in a manner which tends to compensate for temporary reductions in the amount of traffic of another type so as to substantially maintain a particular level of traffic flow.

Instead, the Examiner argues that these limitations are taught by Bae at page 175, left column, lines 30-58, and page 176, left column, lines 45-62, which the Examiner characterizes as disclosing that “traffic bursts are multiplexed to maintain constant levels.” Applicants respectfully disagree with the Examiner’s characterization of the relied-upon portions of Bae. Rather, Applicants respectfully submit that Bae at page 175, left column, lines 30-58, is directed to proposed definitions of burstiness. Page 176, left column, lines 45-62, is directed to investigations of statistical multiplexing of bursty sources, and more specifically how the cell loss probability and the average delay time varies as a function of various parameters, such as the number of sources, the peak bit rate, and the burstiness of the sources.

The relied-upon portions of Bae contain no teaching or suggestion directed to generating traffic bursts, much less doing so in a manner which tends to compensate for temporary reductions in the amount of traffic of another type so as to substantially maintain a particular level of traffic flow.

Accordingly, Bae fails to supplement the teachings of Smith and St. Hontas so as to meet the limitations of claim 13.

Newly-added dependent claims 18 and 20 include limitations similar to those recited in originally-filed claim 6. These claims are believed allowable at least by virtue of their respective dependency from independent claims 16 and 17. These claims are also believed to define separately patentable subject matter for the reasons identified above with regard to dependent claim 6.

Newly-added dependent claims 19 and 21 include limitations similar to those recited in originally-filed claim 13. These claims are believed allowable at least by virtue of their respective dependency from independent claims 16 and 17. These claims are also believed to define separately patentable subject matter for the reasons identified above with regard to dependent claim 13.

In view of the above, Applicants believe that amended claims 1-21 are in condition for allowance.

Respectfully submitted,

A handwritten signature in black ink, reading "Joseph B. Ryan". The signature is fluid and cursive, with the first name "Joseph" being more prominent and the last name "Ryan" following in a similar style.

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